

M.Sc. (Part-I) (Environmental Science) (NEP Pattern) Semester-II  
**PEENV T04 / PEENV T09 Paper-I - Microbiological Aspects of Environment**

P. Pages : 1

Time : Three Hours



**GUG/S/25/15376**

Max. Marks : 80

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- Notes : 1. All questions are compulsory and carry equal marks.  
2. Illustrate the answers with suitable diagrams and examples.

**1.** Discuss structure of microorganisms w.r.t. fungi, bacteria and virus. **16**

**OR**

a) Explain control of pest and disease by microorganism. **8**

b) Discuss role of microorganisms in air. **8**

**2.** Explain characteristics of biofertilizers. **16**

**OR**

a) Explain importance of biofertilizers. **8**

b) Discuss biofertilizer application technology. **8**

**3.** Discuss role of micro-organisms in energy and biomass production **16**

**OR**

a) Describe biotechnological approach of environmental pollution. **8**

b) Explain In-situ and Ex-situ bioremediation. **8**

**4.** Discuss beneficial microbial services in wasteland reclamation. **16**

**OR**

a) Briefly explain Microbial biomass as soil fertility index. **8**

b) Discuss microbial services in green house gases mitigation. **8**

**5.** a) Briefly explain types of culture. **4**

b) Write a note on commercialization of biofertilizer technology. **4**

c) Explain bioethics and biosafety. **4**

d) Write a note on beneficial microbial services in restoration of marginal lands. **4**

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